

Notice of Allowability

Application No.

10/795,997

Applicant(s)

NASHIMOTO ET AL.

Examiner

Art Unit

Shane M. Thomas

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 11/17/2005.
2. ☒ The allowed claim(s) is/are 10-21 (renumbered 1-12).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>12212005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Carl Brundidge (Reg. # 29,621) over two separate instances: 12/15/2005 and 12/21/2005.

The application has been amended as follows:

(i) Claim 22 has been canceled.

(ii) Claim 21 of the application has been amended as follows:

21. A storage control subsystem connected to one or more host devices, comprising:
a control unit;
a plurality of logical volumes formed on one or more physical storage devices;
and

a control memory in which, for each of the plurality of logical volumes, volume discrimination information, ON/OFF information indicating whether an online state exists, and, in the event of an online state, path group information with regard to which host device(s) a subvolume is connected to, are recorded,

wherein, as a result of receiving a specific command from a certain host device, the control unit performs, before a target regular volume and target subvolume among the

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plurality of volumes are paired and data in the target regular volume is copied to the target subvolume, a first examination of whether the target subvolume is in an online state on the basis of the ON/OFF information on the target subvolume, and, when as a result of this first examination, the target subvolume is known to be an online state, the control unit performs a second examination with regard to which separate host device the target subvolume is connected to based on path group information on the target subvolume, and

wherein the result of the second examination is sent from the control unit to the certain host device.

Reasons for Allowance

Claims 10-21 are allowable over the prior art of record.

The following is an examiner's statement of reasons for allowance:

As per claim 10, the claim has been amended to incorporate the subject matter of canceled independent claim 1 with the objected-to subject matter of originally-filed claim 10. The prior art of record does not teach or reasonably suggest when taken alone or in combination a storage control subsystem receiving a referral request for path information from a host that itself received from another storage control subsystem. Specifically, Kitamura does not teach another SCS (as defined with respect to claim 1 supra) sending a request to a host [and the host forwarding the request onto a specific SCS] for path information and then canceling the path if the information contains path cancellation information.

Claim 11 is dependent upon allowable claim 10.

As per claim 12, the prior art of record does not explicitly teach nor suggest alone or in combination each limitation of claim 12. Specifically, Kitamura does not teach the examination of the sub-volume (i.e. the target volume of a mirror pair as defined in the Applicant's specification pages 2-3) during creation of a mirrored pair (i.e. a set of RAID-1 volumes) as well as utilizing a channel control unit to perform a second examination with regard to the other hosts are currently using the target subvolume.

Claims 13-19 are allowable as being dependent on allowable base claim 12.

Claim 21 contains an identical scope as that of allowable claim 10 with the exception of the inherent limitation of "a disk control unit that controls the plurality of logical volumes"; thus, claim 21 is allowable over the prior art of record.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane M. Thomas whose telephone number is (571) 272-4188. The examiner can normally be reached on M-F 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt M. Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shane M. Thomas



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